OMRON

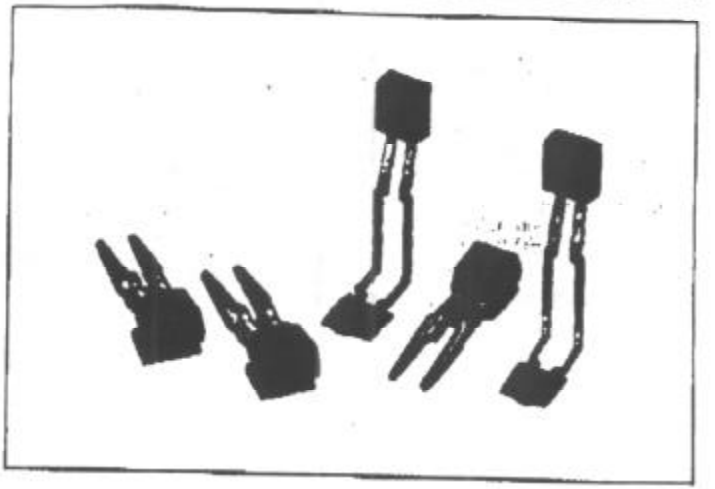
124020

PHOTOTRANSISTOR

EE-TP104HB

Epoxy Resin Mold Type Offering High Directivity

- Designed so that peak spectral wavelength matches near-infrared LED peak wavelength
- Same outline dimensions as Model EE-L104HB infrared LED. Ideal for use with the LED as a photomicrosensor component
- Applications:
  Copier, Printer, Vending Machine, Floppy Disk Drive, Video Cassette Recorder, Cassette Deck, Encoder



Ordering Information

Element	Phototransistor
Lens	High-directivity lens
Terminal type	PC board
Terminal pitch	2.54 mm
No. of terminals	2
Model	EE-TP104HB

Specifications

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Value
Collector-emitter voltage	V_{CEO}	30 V
Collector current	I_C	20 mA
Collector power dissipation*	P_C	100 mW
Operating temperature**	Topr	−25° to 85°C
Storage temperature	Tstg	−40° to 85°C

* Refer to "Temperature rating diagram" when ambient temperature is not at 25°C.
** Without freezing or condensation.

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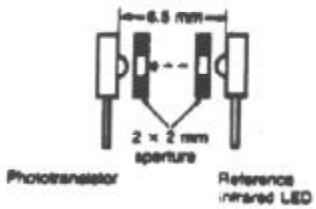
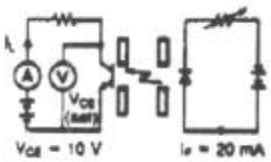
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Limits	Test conditions
Dark current	Id	200 nA max.	V_{CE} = 10 V
Light current*	I_L	1 mA min.	I_F = 20 mA, V_{CE} = 10 V
Collector-emitter saturation voltage	V_{CE} (sat)	0.4 V max.	I_F = 20 mA, I_L = 1 mA
Peak spectral wavelength	λP(T)	850 nm typ.	V_{CE} = 10 V
DC current amplification	h_{FE}	600 typ.	V_{CE} = 10 V, I_L = 2 mA

* Receiver output measuring method and conditions (light current and collector-emitter saturation voltage)
The phototransistor is placed 6.5 mm away from a reference infrared LED with the transistor and LED facing each other and the optical axes of both in alignment. In front of each is a 2 × 2 mm aperture plate. The measurement is carried out in completely dark environment to prevent the transistor from being adversely affected by external interference lights (The "reference infrared LED" is a diode with 10 V of V_{CE}, 2 mA of I_C, and 600 of h_{FE} and outputs a current of 2 mA under the illustrated conditions).

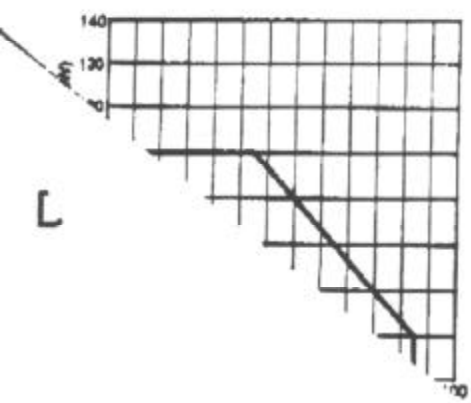




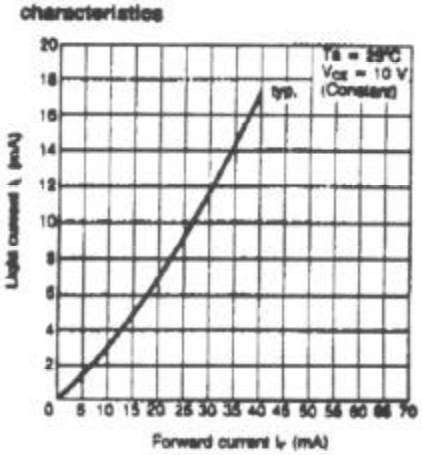
Engineering Data

Note: The following are typical values (except for "Temperature rating diagram"). Actual values vary.

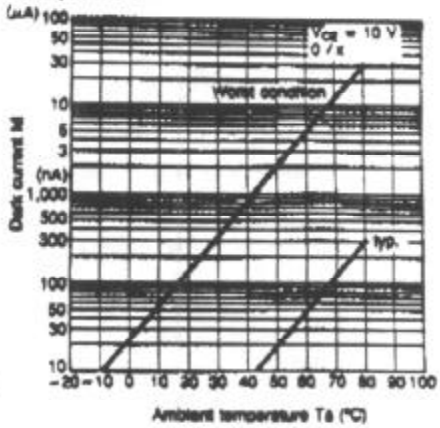
Temperature rating diagram*



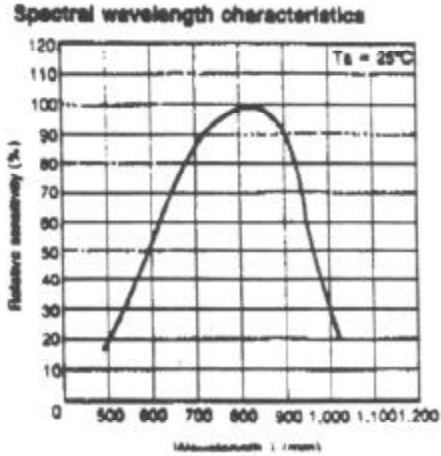
Light current vs. illumination characteristics



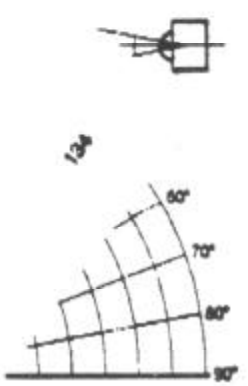
Dependency of dark current on temperature



Spectral wavelength characteristics



ALL DIMENSIONS
To convert millime



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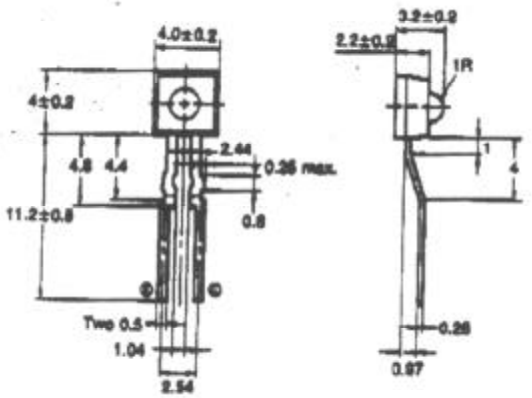
Dimensions

EE-TP104HB



Terminal arrangement
(bottom view)